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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/416,270	10/12/1999	YOUN-HAN CHANG	400396/YPLEE	5941

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EXAMINER

DOVE, TRACY MAE

ART UNIT PAPER NUMBER

1745

DATE MAILED: 11/30/2001

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/416,270

Applicant(s)
Chang

Examiner
Tracy Dove

Art Unit
1745



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Oct 29, 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-7, 9-13, and 15 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-7, 9-13, and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 7 20) ☐ Other: _____

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DETAILED ACTION

This Office Action is in response to the communication filed on 10/29/01. Applicant's arguments have been considered, but are moot in view of the new grounds of rejections. Claims 1, 3-7, 9-13 and 15 are rejected in view of the prior art. Claims 2, 8, 14 and 16 are canceled. This Action is made **Non-Final**.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 3-7, 9-13 and 15 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for aluminum, does not reasonably provide enablement for "a metal". The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. Claims 1, 7, 13 and 15 recite "a positive collector comprising a metal having". The subject matter "a metal" is broader in scope than the subject matter described in the specification (aluminum).

Claim Rejections - 35 USC § 102

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 4, 7, 9 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Fauteux et al., US 4,925,752.

Fauteux teaches a solid state electrochemical cell having a porous cathode current collector. The cathode/current collector layer comprises a substrate which has a plurality of surface voids. As shown in Fig. 1, the substrate is in the form of a screen or grid. However, other physical forms such as foamed states, etched foils, electroplated films, woven or non-woven fabrics may be utilized as the substrate. A collector of expanded metal is disclosed in col. 2, lines 54-63. The cathode composition (active material) is coated onto at least one surface of the positive current collector. See col. 3, lines 44-53. The alkali metal anode layer may take the form of a lithium foil, a lithium coated foil such as nickel or *copper foil having a layer of lithium deposited on its surface* or a lithium alloy. See col. 3, lines 63-66. The electrolyte layer, which is ionically but not electrically conductive, takes the form of a solid material (separator) and is laminated to the alkali metal anode layer and the cathode/current collector layer. See col. 4, lines 3-6. Note the attached class 429 definition for a separator is "a material used to space or maintain a pair of electrodes out of contact". Cathode compositions are disclosed at col. 5, lines 21-44. To produce the cathode/current collector material, the materials used to form the cathode

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composition are mixed together (slurry) and coated onto the surface of the current collector substrate (col. 5, lines 63-66).

Thus the claims are anticipated.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 6, 10, 12, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fauteux et al., US 4,925,752.

See discussion of Fauteux above.

Fauteux does not explicitly state the cathode current collector is punched metal or that the active material is coated on both sides of the collector.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because one of skill would have known that a punched metal substrate could be used as the collector with surface voids of Fauteux. Fauteux teaches other physical forms may be used as the collector with holes for the cathode. Since a punched metal is a collector with surface voids (holes), one of skill would find it obvious to use the punched metal substrate for the collector with surface voids of Fauteux.

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Regarding the limitation that active material is coated on both sides of the collectors, Fauteux does not explicitly state whether the active material is coated on only one or both sides of the collector. However, Fauteux recites "Maintained within voids 20 is cathode composition 22. Referring now to Fig. 2, it is seen that the surface of substrate 18 which faces electrolyte layer 14 is also coated with cathode composition 22." See col. 3, lines 49-53. This disclosure suggests that the cathode composition is coated on both sides of the collector. Furthermore, it is well known in the art to coat both sides of a positive or negative current collector with active material.

Regarding claims 13 and 15, Fauteux teaches laminar thin-cell batteries containing alkali metal anodes are known in the art, and those skilled in the art will appreciate that the laminar batteries can have many constructions, such as those including a jelly roll or fan folded laminate strip design. Thus, Fauteux provides motivation for the limitation "a plurality of bi-cells stacked on each other" of claims 13 and 15 because Fauteux teaches that one of skill would know that laminar thin-cell batteries can have many construction types.

Response to Amendment

Due to the new grounds of rejection presented, the finality of the rejection of the last Office action of 8/28/01 is withdrawn.

Response to Arguments

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Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

The 35 U.S.C. 103(a) rejection in view of Kejha has been withdrawn.

The subject matter of canceled claims 2, 8, 14 and 16 was indicated as allowable in the Action of 8/28/01. The indication of allowable subject matter is withdrawn in view of the newly found prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is (703) 308-8821. The Examiner may normally be reached Monday, Wednesday and Thursday. My supervisor is Gabrielle Brouillette, who can be reached at (703) 308-0756. The Art Unit receptionist can be reached at (703) 308-0661 and the official fax number is (703) 305-5433.

November 15, 2001



**CAROL CHANEY
PRIMARY EXAMINER**